

ABSTRACT OF THE DISCLOSURE

The permanent magnet type reluctance electric motor includes a stator including a stator iron core and having armature coils placed inside slots, and a 5 rotor provided with a plurality of magnetic barriers formed by cavities and placed on an inner side of the stator such that sections where a magnetic flux can easily pass (d-axis) and sections where a magnetic flux cannot easily pass (q-axis) are alternately formed, 10 and made of a rotor iron core having permanent magnets in cavities. The rotor satisfies a relationship of  $PL / 2\pi RW_{qave} \geq 130$ , where  $W_{qave}$  [m] indicates an average thickness of the rotor iron core on an outer side in a radial direction of the rotor with respect to 15 cavities arranged in a q-axis direction,  $L$  [m]; a width in a circumferential direction of the cavities,  $P$ ; the number of poles and  $R$  [m]; the radius of the rotor.

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